

LOG OF MEETING

CPSC 6 (b)(1) Cleared  
3/7/94  
No Mfrs/Provbls or  
Identified by  
4 MAR 1994  
Identified,  
Processed.

**SUBJECT:** Meeting of the National Electrical Code Committee Panel 20.

**DATE:** January 20-22, 1994

**PLACE:** Hyatt Regency Hotel  
San Antonio, TX

**DATE OF LOG ENTRY:** February 18, 1994

**LOG ENTRY SOURCE:** William H. King, Jr., ES *W.H.K.*

**CPSC PARTICIPANTS:** William H. King, Jr., ES

**NON-CPSC PARTICIPANTS:** See attached list.

**SUMMARY OF MEETING:**

Panel 20 of the National Electrical Code Committee met to consider 125 proposals to amend Articles 422, 424, 426 and 680 of the current 1993 edition of the National Electrical Code (NEC). Mr. King is a non-voting member of Panel 20, and CPSC's only representative appointed to the NEC Committee. Panel action at the meeting is the subject of a letter ballot following the meeting. The rules followed are those of the National Fire Protection Association (NFPA), the organization that sponsors the National Electrical Code.

Numerous proposals at the meeting were of particular interest to the Consumer Product Safety Commission staff. These proposals could impact the fire and/or electric shock hazard potential of the electrical appliances and equipment involved. The products included those which have been the subject of CPSC activities in the past. The specific products are portable, free-standing hydromassage units, hand-held hair dryers, high-pressure spray washers, and electric spa and hot tub assemblies.

The proposals involving the above products and the panel actions are shown on the attached pages. In each of these cases, Mr. King spoke in support of the panel action, providing background information, data, and engineering rationale.

A copy of the letter ballot used by NFPA is attached.

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# Committee List

## National Electrical Code - Panel 20

### Articles 422, 424, 426, 680

Mark. W. Earley  
NEC-P20

**Russell J. Helmick**  
Chair E 90  
City of Irvine  
One Civic Ctr. Plaza  
Box 19575  
Irvine, CA 92713  
International Association of Electrical Inspectors  
Phone # (714) 724-6510 Fax # (714) 724-6440

**Edward S. Charkey**  
Principal I 90  
American Insurance Services Group, Inc.  
85 John St.  
New York, NY 10038  
Phone # (212) 669-0491 Fax # (212) 669-0535

**Robert C. Lester**  
Principal E 90  
New York Board of Fire Underwriters  
217 Lake Ave.  
Rochester, NY 14608  
Phone # (716) 254-0165 Fax #

**Marcos Ramirez**  
Principal IM 4/93  
Mr. Electric Service Co., Inc.  
420 S Broadway  
Hicksville, NY 11801-5044  
Independent Electrical Contractors  
Phone # (516) 433-8383 Fax # (516) 822-6061

**Donald J. Talka**  
Principal RT 90  
Underwriters Laboratories Inc.  
1285 Walt Whitman Rd.  
Melville, NY 11747  
Phone # (516) 271-6200 Fax # (516) 271-5720

**Leonard K. VanTassel**  
Principal M 90  
Carrier Air Conditioning  
Carrier Pkwy.  
PO Box 4808  
Syosset, NY 13221  
Air Conditioning and Refrigeration Institute  
(VL 422, 424, 426)  
Phone # (315) 432-3843 Fax # (315) 433-4065

**Kenneth J. Byrne**  
Principal UT 91  
Virginia Power  
One James River Plaza  
PO Box 26666  
Richmond, VA 23261  
Electric Light Power Group/Edison Electric Institute  
Phone # (804) 775-5329 Fax #

**Ray Franklin**  
Principal L 90  
IBEW  
Local #1  
5850 Elizabeth Ave.  
St Louis, MO 63110  
International Brotherhood of Electrical Workers  
Phone # (314) 647-5900 Fax #

**James R. McNicol**  
Principal M 90  
Brett Aqualine Inc.  
5221 Oceanus Dr.  
Hunt Beach, CA 92649-1028  
National Spa and Pool Institute  
(VL 680)  
Phone # (714) 891-7211 Fax #

**Herbert P. Spiegel**  
Principal IM 90  
Corona Industrial Electric, Inc.  
901 E 3rd St.  
Corona, CA 91719  
National Electrical Contractors Association  
Phone # (909) 737-4570 Fax # (909) 737-9611

**Leon T. Uhl**  
Principal M 90  
Leon T Uhl, PE  
349 Church St.  
Elmhurst, IL 60126  
Association of Home Appliance Manufacturers  
(VL 422, 424, 426)  
Phone # (708) 279-9462 Fax #

**Robert M. Yurkanin**  
Principal U 90  
Electran Process Int'l. Inc.  
38 Hobart Gap Rd.  
Short Hills, NJ 07078  
Institute of Electrical & Electronics Engineers, Inc  
Phone # (201) 376-8169 Fax #

# Committee List

## National Electrical Code - Panel 20 Articles 422, 424, 426, 680

Mark. W. Earley

NEC-P20

### Dennis L. Baker

Alternate IM 1/94  
Springs & Sons Electrical Cont Inc.  
2129 W Mountain View Rd.  
Phoenix, AZ 85021  
Independent Electrical Contractors  
Alt. to M. Ramirez  
Phone # (602) 944-6257 Fax #

### Robert L. Cochran

Alternate E 4/93  
City of Costa Mesa  
77 Fair Dr.  
PO Box 1200  
Costa Mesa, CA 92628-1200  
International Association of Electrical Inspectors  
Alt to R. J. Helmick  
Phone # (714) 754-5230 Fax # (714) 556-7508

### H. Brooke Stauffer

Alternate M 4/93  
Assn. of Home Appliance Manufacturers  
701 Pennsylvania Ave. NW Suite 900  
Washington, DC 20004  
Association of Home Appliance Manufacturers  
Alt to L. T. Uhl  
(VL to 422, 424, 426)  
Phone # (202) 434-7478 Fax # (202) 934-7400

### Rick C. Gilmour

Nonvoting 92  
Canadian Standards Assn.  
178 Rexdale Blvd.  
Toronto (Rexdale) ON M9W 1R3  
Canada  
(nonvoting)  
Phone # (416) 747-4112 Fax # (416) 747-2473

### Mark W. Earley

Nonvoting Staff Liaison  
Nat'l. Fire Protection Assn.  
1 Batterymarch Park  
PO Box 9101  
Quincy, MA 02269-9101  
Phone # (617) 770-3000 Fax # (617) 770-0700

### R. L. Bunch

Alternate M 90  
Tecumseh Products Co.  
100 E Patterson St.  
Tecumseh, MI 49286  
Air Conditioning and Refrigeration Institute  
Alt to L Van Tassel  
Phone # (517) 423-8703 Fax # (517) 423-8426

### Robert Egan

Alternate L 7/93  
IBEW Local #1  
5850 Elizabeth Ave.  
St. Louis, MO 63110  
International Brotherhood of Electrical Workers  
Alt. to R. Franklin  
Phone # (314) 647-5900 Fax #

### James N. Pearse

Voting alternate M 90  
Leviton Mfg Co. Inc.  
59-25 Little Neck Pkwy.  
Little Neck, NY 11362  
National Electrical Manufacturers Association  
Alt to NEMA Rep.  
Phone # (718) 281-6608 Fax # (718) 281-6419

### William H. King

Nonvoting 90  
U.S. Consumer Product Safety Comm  
4330 E West Highway  
Bethesda, MD 20814-4408  
(nonvoting)  
Phone # (301) 504-0508 Fax # (301) 504-0508

20-7 -( 422-8(3), Exception No. 1 ): Reject

Submitter Owen R. Jackson , Technology Research Corporation

**RECOMMENDATION:**

Delete "Exception No. 1: A high pressure spray washer protected by a system of double insulation if such a unit is provided with a permanent warning indicating that it shall be connected to a receptacle protected by a ground fault circuit interrupter."

**SUBSTANTIATION:**

The referenced exception still requires the use of GFCI's; however a double insulation does not guarantee nor is it intended to provide a water-tight compartment. In field applications, these units are subjected continually to high levels of moisture, inducing high probable risk of ground fault conditions. The GFCI requirement remains under the guidelines of Exception No. 1, however, it covers the responsibility for protection from the original equipment manufacturer to the end user. Historically, the consumer will not heed the warning label, nor will he be able to determine if the supply power he is utilizing is so protected. Exception No. 1 is a step backward in providing shock protection to a user of this type of equipment and seriously detracts from the objective of this paragraph to provide a safe electrical environment.

**PANEL ACTION:** Reject

**TYPE OF CHANGE:** ☐ Add text. ☐ Delete text. ☐ Move text to:

**PANEL STATEMENT:**

If the Exception is removed then the unit itself must have a factory installed GFCI integrated into the unit itself. The Exception recognizes the added safety of double insulated spray washers by allowing the GFCI to be located remote from the unit. This would discourage the manufacture of double insulated units. There is no substantiation or evidence there has been any field reported problems with these units.

20-8 -( 422-8(3), Exception No. 2 ): Reject

Submitter Owen R. Jackson , Technology Research Corporation

**RECOMMENDATION:**

Proposed Revision: Exception No. 2: A high-pressure spray washer rated for a 3-phase supply system exceeding 480 volts.

**SUBSTANTIATION:**

Ground Fault Circuit Interrupters for 3-phase high-pressure spray washers are now commercially available to 480 volts.

**PANEL ACTION:** Reject

**TYPE OF CHANGE:** ☐ Add text. ☐ Delete text. ☐ Move text to:

**PANEL STATEMENT:**

The Panel is not aware of any listed ground fault circuit interrupters for personnel protection for 480 volt or 3 phase systems.

20-17 -( 422-8(d)(3), Exception No. 1 ): Reject

Submitter Larry Miller , National Electrical Mfrs. Association

**RECOMMENDATION:**

Delete: "Exception No. 1: A high pressure spray washer protected by a system of double insulation if such a unit is provided with a permanent warning indicating that it shall be connected to a receptacle protected by a ground fault circuit interrupter."

**SUBSTANTIATION:**

This exception does not provide for a safe electrical environment:

a. Reliance on the user to plug into a protected receptacle is not realistic. The cord connected high pressure spray washer is a portable device that is moved from location to location. It would be virtually impossible for the operator to know whether the particular receptacle has protection. Statistically, the probability is that it will not be protected. That is precisely why hair dryers were required to be protected against immersion.

b. In consideration of the above, double insulation is not an appropriate means of protection when used in a wet "electrically hostile" environment such as the application of pressure washers. Double insulation was not intended for, and does not prevent, the entrance of water from contacting live electrical parts and, therefore, does not provide any protection whatsoever against the hazard of electric shock in this environment.

**PANEL ACTION:** Reject

**TYPE OF CHANGE:** ☐ Add text. ☐ Delete text. ☐ Move text to:

**PANEL STATEMENT:**

Same Panel Statement as Proposal 20-7.

20-18 -( 422-8(d)(3), Exception No. 2 , No. 3 ): Reject

Submitter Timothy D. Curry , Curry Electric, Inc.

**RECOMMENDATION:**

Revise text as follows:

Delete both exceptions in their entirety and replace with new wording thus: exception #2 - A HIGH PRESSURE SPRAY WASHER RATED OVER 250 VOLTS AND/OR RATED FOR A THREE PHASE SUPPLY CURRENT SHALL NOT BE REQUIRED TO BE PROVIDED WITH FACTORY INSTALLED GROUND FAULT CIRCUIT INTERRUPTER PROTECTION IN THE SUPPLY CORD IF SUCH A UNIT IS PROVIDED WITH A PERMANENT WARNING INDICATING THAT IT MUST BE CONNECTED TO A RECEPTACLE PROTECTED BY GFCI.

**SUBSTANTIATION:**

As discussed in TCR 1990 Log #3740, there are now GFCI units available for hard wiring in the supply circuits to units over 250 volts and/or three phase.

**PANEL ACTION:** Reject

**TYPE OF CHANGE:** ☐ Add text. ☐ Delete text. ☐ Move text to:

**PANEL STATEMENT:**

Same Panel Statement as Proposal 20-8.

20-28 - ( 422-23, Exception-(New) ): Reject

Submitter Donald J. Mesite, Jr. , Norelco Consumer Products Company

**RECOMMENDATION:**

Add new paragraph (Exception) as follows:

"Exception: Double-insulated products and/or products where both sides of the line are suitably protected (e.g., single-pole on/off switch with over-current protecting device on opposite side of the line.)"

**SUBSTANTIATION:**

Polarization is, of course, a meaningful requirement in certain applications in order to eliminate concerns due to electrical stress internal to a product (thereby reducing the risk of fire or electric shock.) However, these concerns are not applicable to double-insulated products and/or can be addressed alternatively by protecting both sides of the line (as in the e.g., stated above.) In these instances, there is no need to require polarization.

**PANEL ACTION:** Reject

**TYPE OF CHANGE:** ☐ Add text. ☐ Delete text. ☐ Move text to:

**PANEL STATEMENT:**

The polarization of cord- and plug-connected appliances enhances safety and ensures that the grounded conductor connection in the cord will be connected to the grounded conductor in the receptacle. Section 200-11 also requires that no grounded conductor shall be attached to any terminal or lead that could result in reversal of polarity. The Proposed exception is too broad and could result in allowing other types of cord- and plug-connected appliances that have Edison-base lampholders and receptacles in the appliance to not require polarity type caps.

20-29 -( 422-24 ): Reject

Submitter John Lepf , Yardville, NJ

**RECOMMENDATION:**

Deleted text:

Cord- and plug-connected appliances subject to immersion. Cord-and plug-connected portable free-standing hydromassage units and hand-held hair dryers shall be constructed to provide protection for personnel against electrocution when immersed while in the "on" or "off" position.

**SUBSTANTIATION:**

These items referred to are manufactured appliances, purchased like a razor or coffee not installed or constructed on the job being so controversial to the code. This section should be deleted.

**PANEL ACTION:** Reject

**TYPE OF CHANGE:** ☐ Add text. ☐ Delete text. ☐ Move text to:

**PANEL STATEMENT:**

The Panel believes that immersion of freestanding hydromassage units and hand-held hairdryers should be addressed in the NEC as a means of reducing the number of deaths associated with these appliances falling into water.

20-53a - ( 680-4 ): Accept

Submitter CMP 20 ,

**RECOMMENDATION:**

Add new definition to Section 680-4 to read as follows: "Packaged Spa or Hot Tub Assembly: Any of the following integral electrical parts: Motor-driven blower, motor-driven pump, filter, heater, light, controls, and wiring, with or without a factory-fabricated spa or tub vessel."

**SUBSTANTIATION:**

Provide a definition on packaged spa and hot tub assemblies subject to the requirements of Section 680-42.

**PANEL ACTION:** Accept

**TYPE OF CHANGE:** ☒ Add text. ☐ Delete text. ☐ Move text to:

20-118 - ( 680-42 ): Accept in Principle

**Submitter** William H. King Jr. , U.S. Consumer Product Safety Commission

**RECOMMENDATION:**

Revise text as follows:

680-42. Protection. Outlets that supply spas and hot tubs and associated electrical components shall be protected by ground-fault circuit-interrupters.

EXCEPTION: Where listed packaged units are marked to indicate that integral ground-fault circuit-interrupter protection is provided for all equipment within the unit (blowers, controls, heaters, lights, pumps, etc.).

**SUBSTANTIATION:**

Wording of present text could lead to confusion for those installing or inspecting installations with regard to the extent of the ground-fault circuit-interrupter protection that may be provided by the manufacturer of a packaged unit. Some packaged units may not provide protection for all circuits within the unit.

**PANEL ACTION:** Accept in Principle

**TYPE OF CHANGE:** ☒ Add text. ☐ Delete text. ☐ Move text to:

Modify the proposal text to read as follows:

"680-42. Protection. An outlet that supplies a packaged spa or hot tub assembly shall be protected by a ground-fault circuit-interrupter.

EXCEPTION: Where a listed packaged assembly is marked to indicate that integral ground-fault circuit-interrupter protection is provided for all electrical parts within the assembly (blowers, controls, heaters, lights, pumps, wiring, etc.)."

**PANEL STATEMENT:**

Wording of present text could lead to confusion for those installing or inspecting installations with regard to the electrical parts required to be protected and to the extent of the ground-fault circuit-interrupter protection that may be provided by the manufacturer of a packaged assembly. Some packaged assembly may not provide protection for all circuits within the unit.

20-118b -( 680-42, FPN ): Accept

Submitter CMP 20 ,

**RECOMMENDATION:**

Add a Fine Print Note to Section 680-42 to read as follows: "(FPN): See Section 680-4 for definition of a packaged spa or hot tub assembly."

**SUBSTANTIATION:**

The reference is needed to direct the user to the definition of a packaged spa or hot tub assembly from the revised requirements of Section 680-42.

**PANEL ACTION:** Accept

**TYPE OF CHANGE:** ☒ Add text. ☐ Delete text. ☐ Move text to:

## LETTER BALLOT

### NATIONAL ELECTRICAL CODE

AFTER VOTING, RETURN ONE COPY OF THE BALLOT TO NFPA, ELECTRICAL  
DEPARTMENT, P.O. BOX 9101, ONE BATTERY MARCH PARK QUINCY, MA 02269-9101

MUST BE RECEIVED BY NFPA  
BY: MARCH 11, 1994

COMMITTEE ACTION:  
A=Accept; R=Reject; APA=Accept in Part;  
APR=Accept in Principle; APP=Accept in Principle in Part

Negative votes must be accompanied with reasons for so voting. Please make comments on a separate sheet. If handwritten use black ink only. Those "abstaining" should give the reason therefore.

#### Section I

If you concur with the recommended Committee Action on ALL Proposals, you may check in the space indicated below and sign your name. If you do not concur with Committee Action on any Proposal or wish to abstain on any Proposal, please skip to Section II and list, on the ballot form, those Proposals on which you do not concur or are abstaining.

☐ Non-voting Member  
I concur with the recommended Committee Action on all Proposals.

Signed William H. King, Jr.

Name William H. King, Jr.  
Type or Print in Black Ink

Date 2/18/94

#### Section II

☐ I concur with the recommended Committee Action on all Proposals except as indicated on the attached sheets.

Signed \_\_\_\_\_

Name \_\_\_\_\_  
Type or Print in Black Ink

Date \_\_\_\_\_